United Nations E/CN.3/2010/9

Economic and Social Council

Distr.: General
15 December 2009

Original: English

Statistical Commission
Forty-first session
23-26 February 2010
Item 3 (g) of the provisional agenda*
Items for discussion and decision: environment statistics

Framework for the Development of Environment Statistics

Report of the Secretary-General

Summary

The present report was prepared at the request of the Statistical Commission at its fortieth session.[a] It includes the conclusions and recommendations of the Expert Group Meeting on the Framework for the Development of Environment Statistics, held in New York from 10 to 12 November 2009. The Commission may wish to review and endorse the recommendations regarding (a) the revision of *A Framework for the Development of Environment Statistics* (United Nations, 1984) to encompass the development of an integrative conceptual framework and (b) the plan to establish a core set of environment statistics to guide countries with limited resources and at the early stages of developing their environment statistics systems.

Points for discussion by the Commission are contained in paragraph 37 of the report.

[a] See *Official Records of the Economic and Social Council, 2009, Supplement No. 4* (E/2009/24), chap. I, sect. A.

* E/CN.3/2010/1.

09-65203 (E) 070110

Please recycle

Contents

		Page
I.	Introduction	3
II.	United Nations Framework for the Development of Environment Statistics	4
III.	Expert Group Meeting on the Framework for the Development of Environment Statistics	5
IV.	Main conclusions of the Expert Group Meeting	6
V.	Guiding principles for the revision of the Framework	8
VI.	Proposed contents of the revised Framework	8
VII.	Modalities and timetable for the revision process	9
VIII.	Modalities and timetable for the development of the core set of environment statistics	10
IX.	Points for discussion	11

I. Introduction

1. During discussions on statistics related to climate change at the Conference on Climate Change and Official Statistics (Oslo, April 2008)[1] and the Conference on Climate Change, Development and Official Statistics in the Asia-Pacific Region (Seoul, December 2008),[2] several countries stressed that a conceptual reference framework should be the starting point for defining the scope and content of climate change-related statistics and for developing a set of consistent definitions, classifications, variables, tabulations and indicators. In the programme review on climate change and official statistics (see E/CN.3/2009/2), discussed at the fortieth session of the Statistical Commission, it was recommended that the development of such a framework should be one of several short-term tasks and that work should start thereon as soon as possible.

2. The Statistical Commission at its fortieth session also noted the interest of some countries in developing a framework of environmental statistics at the national level to facilitate the understanding of the phenomenon of environmental and climate change.[3]

3. The countries had stressed the importance of an overarching framework that clearly marks out the scope and contents of environment statistics and that is integrative in nature, comprehensive and flexible enough to accommodate the information needs of new and emerging environmental and policy issues such as climate change. Such a framework should allow for the identification of data needs, data sources and gaps, and for the allocation of roles and responsibilities of the different stakeholders in the production of environmental data, including the assurance of data quality.

4. Environment statistics frequently lack one or more of the standard attributes of high-quality statistics, namely, relevance, accuracy, timeliness, accessibility, interpretability and coherence. The fact that environment statistics are ad hoc, widely dispersed and of varying degrees of quality clearly underlines the need for a framework, that is, a basic organizing structure to guide environment statistics.

5. Statistics Canada submitted a room document at the fortieth session of the Statistical Commission on the current state of environment statistics in Canada and the initiative of Statistics Canada to develop a conceptual framework, based on an ecosystem approach, as a necessary tool for integrating environment statistics, indicators and accounts; for better integrating environment statistics with the other statistical domains; and for achieving significant improvements in the overall quality of environment statistics and thus better responding to emerging policy issues such as climate change.

6. As a response to these developments, the United Nations Statistics Division, in collaboration with Statistics Canada, convened an Expert Group Meeting to review *A Framework for the Development of Environment Statistics*[4] in the light of new

[1] See http://unstats.un.org/unsd/climate_change/docs/Climate%20Change%20and%20Official%20Statistics_Report.pdf.

[2] See http://unstats.un.org/unsd/climate_change/Korea/Korea_Report.pdf.

[3] See *Official Records of the Economic and Social Council, 2009, Supplement No. 4* (E/2009/24), chap. I, sect. B, decision 40/101, para. (h).

[4] Statistical Papers, Series M, No. 78 (United Nations publication, Sales No. E.84.XVII.12).

approaches and current major policy issues, in order to assess the feasibility of revising the Framework and developing it into a much-needed comprehensive and integrative conceptual framework.

II. United Nations Framework for the Development of Environment Statistics

7. The United Nations Statistics Division published three handbooks during the 1980s and early 1990s: *A Framework for the Development of Environment Statistics*, *Concepts and Methods of Environment Statistics: Human Settlements Statistics — A Technical Report*,[5] and *Concepts and Methods of Environment Statistics: Statistics of the Natural Environment*.[6] These handbooks had been developed on the basis of the knowledge of that time regarding the environment and they had built on the experience of the countries most advanced in environment statistics.

8. *A Framework for the Development of Environment Statistics* is a short, concise publication of some 30 pages which: (a) gives the definition, scope and characteristics of environment statistics; (b) identifies the main data needs, sources and uses; (c) describes the purposes and properties of the Framework; (d) introduces and explains the structure and contents (statistical topics) of the Framework; (e) presents the Framework tables; (f) describes the relationship of the Framework with national and resource accounting systems; and (g) presents the applications of the Framework.

9. The Framework for the Development of Environment Statistics was designed to:

- Review environmental problems and concerns and determine their quantifiable aspects
- Identify variables for statistical descriptions of the quantifiable aspects of environmental concerns
- Assess data requirements, sources and availability
- Facilitate inter-institutional dialogue
- Structure databases, information systems, statistical publications and methodological guidelines

10. The Framework, which evolved from the stress-response model adapted for environment statistics by Statistics Canada during the late 1970s and early 1980s, is a broad framework that relates the components of the environment (flora, fauna, atmosphere, water, land/soil and human settlements) to information categories (social and economic activities and natural events; environmental impacts of activities and events; responses to environmental impacts; stocks, inventories and background conditions). The components of the environment define the scope of environment statistics, while the information categories reflect the fact that environmental changes are the result of human activities and natural events.

[5] Studies in Methods, Series F, No. 51 (United Nations publication, Sales No. E.88.XVII.14).

[6] Studies in Methods, Series F, No. 57 (United Nations publication, Sales No. E.91.XVII.18).

11. The contents of the Framework are termed "statistical topics". The determination of the statistical topics under each information category constitutes the basis for the identification of the relevant statistical variables for each topic.

12. The two technical reports, *Statistics of the Natural Environment* and *Human Settlements Statistics*, further elaborated the Framework by presenting the statistical topics in the framework format and identifying the statistical variables required for the development of environment statistics. They proposed concepts, definitions and classifications for these variables. The variables were selected on the basis of policy relevance and user needs; and their relevance to environmental issues and to corresponding Framework topics. The factors of data availability and international comparability were also taken into account.

13. Many countries have used the Framework when embarking on their environment statistics programmes. The Framework has been seen as a reference framework for reviewing environmental issues and matching them with the statistical topics, and for determining the statistical variables that best describe the statistical topics, and as a common framework for minimizing the overlap of subject areas and ensuring consistency in the development of concepts, definitions and classifications. It has been used as an instrument for facilitating the dialogue between the different producers and users of environmental information and has also been used successfully to assess data requirements, data sources, and data availability and quality. It has been useful in structuring environmental information systems. While the objective of the Framework has been to support the development of basic environment statistics, its flexible structure and dimensions have facilitated the selection of indicators and the development of environmental-economic accounts.

III. Expert Group Meeting on the Framework for the Development of Environment Statistics

14. The Expert Group Meeting on the Framework for the Development of Environment Statistics, organized by the United Nations Statistics Division in collaboration with Statistics Canada, was held in New York from 10 to 12 November 2009.

15. The meeting was attended by 29 experts from Australia, Austria, Belize, Brazil, Canada, China, Finland, Guinea, India, Italy, Malaysia, Mauritius, Mexico, the Netherlands, Norway, the Philippines, Singapore, the United Arab Emirates, the United States of America, the European Commission Joint Research Centre, the European Environment Agency, the United Nations Children's Fund (UNICEF), the United Nations Environment Programme (UNEP) and the Division for Sustainable Development of the Department of Economic and Social Affairs of the United Nations Secretariat.

16. The objectives of the Expert Group Meeting were to: (a) discuss the role of a framework in the development of environment statistics; (b) assess the lessons learned when applying different frameworks; (c) review new approaches, including the ecosystem approach, which is the basis of the initiative of Statistics Canada; (d) review the Framework in the light of new approaches and policy issues; and

(e) discuss the directions to be taken in the revision of the Framework and the modalities of the revision process.

17. The Expert Group Meeting was organized to comprise the following six sessions:

- Session 1 on the need for a framework for environment statistics
- Session 2 on an overview of experiences with different frameworks for environment statistics and indicators
- Session 3 on the Canadian approach to a framework based on ecosystems
- Session 4 on a review of the Framework for the Development of Environment Statistics and its accompanying technical reports
- Session 5 on the way forward: revision of the Framework for the Development of Environment Statistics based on national and international experiences
- Session 6 on conclusions

18. The report of the Expert Group Meeting will be submitted to the Statistical Commission at its forty-first session as a background document. The full documentation for the Expert Group Meeting is available at http://unstats.un.org/unsd/environment/fdes.htm.

IV. Main conclusions of the Expert Group Meeting

19. The Expert Group Meeting agreed that an overarching conceptual framework is a necessary tool for defining the scope and boundaries of environment statistics and their links with other statistical domains.

20. The Framework was considered to have been used successfully by many countries. It was agreed that the Framework should be used as the starting point for the development of an integrative conceptual framework and revised on the basis of improved scientific knowledge about the environment and new requirements created by emerging environmental concerns, such as climate change and their management.

21. The ecosystem approach was viewed as a promising conceptual foundation for an environment statistics framework and it was recommended that such an approach be considered in revising the Framework to reflect the advances in scientific and management thinking.

22. There is already a great deal of environmental information being collected. However: (a) much of it is not being summarized and reported in useful ways outside of the environmental community; and (b) data collection and reporting have often been conducted to suit the needs of individual policy initiatives. The revised Framework should incorporate not only traditional statistical data-collection instruments of national statistical systems but also information from scientific monitoring and should provide the conceptual foundation for better data integration within the environment statistics domain and with other economic and social domains.

23. It was agreed that the revised Framework should be scientifically based and stable over time, but, at the same time, sufficiently responsive to emerging new scientific and political agendas. It should allow adjustments to different national

circumstances and priorities and different user needs. It should provide a menu approach suitable for countries at different levels of development.

24. The Expert Group Meeting stressed that the fundamental objective is to improve the quality and availability of environmental information. The revised Framework should assist in ensuring the national and international coherence of policy-relevant data collection and compilation.

25. The revised Framework should be viewed as a hub for various producers and users of environment statistics. It should provide guidance for establishing the roles of all relevant data providers and stakeholders within the framework, reflecting the acknowledgement that environment statistics are linked to different disciplines and data sources.

26. The multilateral environmental agreements and global conventions have to be treated explicitly within the Framework.

27. There was general agreement that the revised Framework should provide the conceptual framework for the development of environment statistics and should be kept as short, simple and concise as possible. It should not go any deeper than identifying statistical topics within the framework and should not include statistical variables, definitions, classifications and tabulations and data compilation methods and best practices.

28. The conceptual framework has to be complemented by statistical handbooks providing the detailed definitions, classifications, tabulations and data compilation methods needed to clarify the concepts underpinning the framework in official statistics. Much of this work is already in progress under the work programme of the United Nations Committee of Experts on Environmental-Economic Accounting on the revision of the System of integrated Environmental and Economic Accounting (SEEA) and within the context of the ongoing and planned development of international recommendations and data compilation guidelines in different areas of environment statistics. Reflecting current efforts within the Framework will help in identifying gaps in methodological work and will facilitate the planning of future activities.

29. The revision of the SEEA will yield three volumes: one intended for formal adoption as an international standard by the Statistical Commission, one intended as a summary of best practice in those areas of environmental-economic accounting that have not yet been developed to the point where they might be considered for standardization, and one containing applications of the SEEA. The alignment of the SEEA and the Framework will be mutually beneficial. The SEEA will benefit in having the support of a clear conceptual framework and the Framework will benefit in having a well-established environmental-economic accounting system through which many of its concepts can be expressed in official statistics.

30. The Expert Group Meeting recommended that, as a response to the request by many developing countries, the Statistics Division should also establish a core set of environment statistics to provide guidance to countries that have very limited resources and are at the early stages of developing environment statistics, and that are not in a position to implement the SEEA nor intend to do so. The core set should include a limited number of statistical variables (accompanied by appropriate methodological descriptions and guidance for their compilation) that will provide national and international policymakers with the most necessary information about

issues of interest to countries and also issues that transcend national boundaries. The core set of environment statistics should be based on the list of environmental indicators (approved by the Statistical Commission in 1995)[7] and on the assessment of international data collections, and major global and regional indicator initiatives, and should consider the most pertinent data needs created by global environmental conventions and multilateral environmental agreements.

V. Guiding principles for the revision of the Framework

31. The Expert Group Meeting agreed on the following guiding principles for the revision process:

- The revised Framework should be a comprehensive, integrative and overarching framework that encompasses all aspects of the environment
- The revised Framework should be kept short (with a maximum length of 50 pages), concise and simple to understand and apply
- The existing Framework should be used as the starting point and revised on the basis of improved scientific knowledge about the environment and new requirements created by emerging environmental concerns and their management
- The ecosystem approach should be considered to be the possible conceptual foundation for the revised Framework
- The revised Framework should be relevant for both developed and developing countries
- The revised Framework should focus on basic environment statistics that can serve multiple purposes and facilitate better data integration within the environment statistics domain and with other economic and social domains
- Although the focus of the revised Framework should remain on the environment, it should also include clear links to economic and social statistics, other frameworks and analytical models and it should be flexible in application so as to allow use for different purposes
- The Framework should serve as an interface between producers and users and should mark out the role of different data producers
- The Framework should target all producers of environment statistics; at the same time, users should also be able to understand it and find it accessible

VI. Proposed contents of the revised Framework

32. The Expert Group Meeting proposed the following elements for inclusion in the revised Framework:

- Objective

[7] See *Official Records of the Economic and Social Council, 1995, Supplement No. 8* (E/1995/28), chap. XII, para. 77.

- Target audience
- Scope and boundaries
- Main concepts and definitions
- Relationship with the System of integrated Environmental and Economic Accounting (SEEA)
- Links to other frameworks and statistics
- Links to multilateral environmental agreements and global initiatives
- Quality assurance and quality control standards
- Structure, dimensions, categories and components (statistical topics) of the framework
- Spatial and temporal considerations
- Links to statistical tools
- Reference to existing and planned statistical standards and recommendations for detailed methodological and statistical guidance

VII. Modalities and timetable for the revision process

33. The Expert Group Meeting recommended the following process and modalities for the revision of the Framework. It is important to recognize that this process will yield only the revised conceptual framework for environment statistics and will not encompass ongoing and future work aimed at refining and standardizing the statistical system needed to complement the conceptual framework. While it is recognized that this time frame is tight, the experts have deemed it feasible, provided the above-mentioned focus on the conceptual framework is maintained. With regard to the process:

- The revision of the Framework should be implemented in two years and submitted to the Statistical Commission in 2012
- The United Nations Statistics Division should lead the process and ensure coordination with the United Nations Committee of Experts on Environmental-Economic Accounting
- The United Nations Statistics Division should convene an expert group, including statisticians as well as representatives of the scientific and user communities from all regions, to carry out the revision
- The wider statistical community should engage in this work through electronic means
- The draft framework should be presented at upcoming international conferences, meetings and workshops in the field of environment statistics to ensure the widest possible discussion and agreement

34. The following timetable is proposed for consideration:

- April 2010: establishment of the expert group

- April-October 2010: United Nations Statistics Division prepares and circulates the draft annotated outline of the revised Framework and a draft list of issues for comments, and invites issue papers
- November 2010: meeting of the expert group to discuss outline and issues
- November 2010-May 2011: United Nations Statistics Division prepares first draft of the revised Framework based on contributions from the expert group
- May-September 2011: circulation, discussion and revision of first draft
- October 2011: meeting of the expert group to review and discuss second draft
- November 2011: global consultation
- December 2011: submission of final draft to Statistical Commission
- February/March 2012: endorsement by the Statistical Commission at its forty-third session

VIII. Modalities and timetable for the development of the core set of environment statistics

35. The Expert Group Meeting recommended that, as a linkage to the revision of the Framework, there should also be the development by the United Nations Statistics Division of a core set of environment statistics to provide guidance to countries with very limited resources and at the early stages of development of environment statistics. This minimum set of core statistics should be based on the United Nations Statistics Division list of environmental indicators and on the assessment of international data collections and major global and regional indicator initiatives and should reflect the most pertinent data needs created by global environmental conventions and multilateral environmental agreements.

36. The following process and timetable are suggested for the development of the core set of environment statistics:

- April-November 2010: United Nations Statistics Division undertakes the analysis and prepares first draft list in collaboration with the Intersecretariat Working Group on Environment Statistics (IWG-ENV)
- November 2010: discussion of first draft list at the Expert Group Meeting on the revision of the Framework
- December 2010-June 2011: United Nations Statistics Division prepares revised draft list and initiates a wide consultation process
- June 2011: revised draft core set of environment statistics discussed by the Intersecretariat Working Group on Environment Statistics and presented to the United Nations Committee of Experts on Environmental-Economic Accounting
- October 2011: revised draft core set of environment statistics reviewed at the Expert Group Meeting on the revision of the Framework
- November 2011: global consultation
- December 2011: submission of draft core set of environment statistics to the Statistical Commission at its forty-third session

IX. Points for discussion

37. **The Commission may wish to:**

(a) **Review the conclusions regarding the revision of the Framework presented in the present report (paras. 19-30);**

(b) **Review and endorse the guiding principles, contents, modalities and timetable for the revision of the Framework (paras. 31-34);**

(c) **Also review and endorse the plan for the development of a core set of environment statistics (paras. 30 and 36).**